

**Diaz, Jose**

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**From:** Eckert, George  
**Sent:** Thursday, September 25, 2003 12:45 PM  
**To:** Diaz, Jose  
**Subject:** I searched "stress in TEOS" and also got this:

The films are under modest tensile stress as deposited, but if the measurement of stress is not performed quickly, apparent compressive stress will be measured as water is absorbed into the film over the course of a few hours. Upon heating, the water is driven off, with a consequent increase in tensile stress superimposed upon the tensile stress resulting from differential thermal expansion of the silicon wafer and silicon dioxide film. If the wafer is heated at maximum temperatures up to about 400 C, the stress upon cooling will be more tensile than it was initially, and will slowly relax back to compressive stress over several days: this is the phenomenon of stress hysteresis.